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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,507	07/30/2001	Yasuaki Hidaka	2185-0560P	9754

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EXAMINER

CHEN, VIVIAN

ART UNIT PAPER NUMBER

1773

DATE MAILED: 09/11/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,507

Applicant(s)

HIDAKA ET AL

Examiner

Vivian Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 12/27/2001 has not been considered because all the foreign documents are missing. The Examiner requests that Applicant resubmit the IDS or provide replacement copies of the foreign references.

Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over FURUTA ET AL (US 6,306,501 B1) in view of HARVEY ET AL (US 5,589,236).

FURUTA ET AL '501 discloses laminate films suitable for packaging, wherein the films comprise at least one liquid crystal polyester-containing (LCP) layer and at least one

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thermoplastic layer, wherein the LCP-containing layer comprises 56-99.9 wt% of a liquid crystal polyester as a continuous phase and 0.1-44 wt% of a rubber containing functional groups such as epoxy or glycidyl groups which are reactive with the liquid crystal polyester as a disperse phase, said functional groups being present in the rubber in amounts of 0.1-30 wt% (line 50, col. 1 to line 50, col. 9; lines 23-31, col. 10; lines 35-54, col. 11) as recited in claims 1-3, 8-14, 16, 18. The LCP-containing layer has a typical thickness of 3-500 microns (lines 19-22, col. 10) as recited in claims 17, 19 and may be formed by inflation (lines 23-30, col. 11) as recited in claim 15. An optional adhesive layer comprising a polyurethane may be used between the LCP-containing layer(s) and the thermoplastic layer(s) (lines 19-22, col. 11) as recited in claims 5-7. However, the reference does not explicitly disclose laminates with ethylene vinyl alcohol (EVOH) layers.

HARVEY ET AL discloses that it is well known in the art to laminate ethylene-vinyl alcohol (EVOH) layers to a LCP film to form useful multilayer structures (lines 58-68, col. 1).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a known polymer such as EVOH in the laminates of FURUTA ET AL '501 in order to obtain specific barrier or surface contact properties. One of ordinary skill in the art would have incorporated multiple LCP-containing layers and/or additional cover layers in the laminate and positioned said layers in order to obtain the surface characteristics or barrier and mechanical properties required for a specific usage as indicated in claims 3-4.

4. Claims 1-6, 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over SUMIDA ET AL (US 5,364,669) in view of FURUTA ET AL (US 5,997,765).

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SUMIDA ET AL discloses laminate films suitable for packaging, wherein the films comprise at least one liquid crystal polyester-containing (LCP) layer and at least one thermoplastic layer such as an EVOH layer, wherein the LCP may be blended with other polymeric components (line 25, col. 4 to line 33, col. 13; line 67, col. 13 to line 2, col. 14) as recited in claims 1-3, 16, 18. The LCP-containing layer has a typical thickness of 1-500 microns (lines 62-66, col. 13) as recited in claims 17, 19 and may be formed by inflation (lines 1-20, col. 19) as recited in claim 15. An adhesive layer comprising a polyurethane or epoxy-modified polymer is used between the LCP-containing layer(s) and the thermoplastic layer(s) (lines 3-45, col. 14) as recited in claims 5-6. However, the reference does not explicitly disclose the recited LCP blend.

FURUTA ET AL '765 discloses that it is well known in the art to use LCP-based blends in laminates wherein the blends comprise 56-99.9 wt% of a liquid crystal polyester as a continuous phase and 0.1-44 wt% of a rubber containing functional groups such as epoxy or glycidyl groups which are reactive with the liquid crystal polyester as a disperse phase, said functional groups being present in the rubber in amounts of 0.1-30 wt% (columns 6-15; lines 17-35, col. 17) as recited in claims 8-14 in order to obtain multilayer films with improved barrier and mechanical properties.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a known LCP blend as disclosed in FURUTA ET AL '765 as the LCP-containing layer(s) in the laminates of SUMIDA ET AL in order to obtain packaging materials with desirable barrier or forming properties. One of ordinary skill in the art would have incorporated multiple LCP-containing layers and/or additional cover layers in the laminate

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and positioned said layers in order to obtain the surface characteristics or barrier and mechanical properties required for a specific usage as indicated in claims 3-4.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

FURUTA ET AL (US 5,817,384) and JAPANESE PATENT APPLICATION 07-333630 disclose LCP/thermoplastic laminates.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (703) 305-3551. The examiner can normally be reached on Monday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 (for non-after finals) and (703) 872-9311 (for after-finals).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

September 8, 2002



Vivian Chen
Primary Examiner
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